

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Dennis POSTUPACK

Appl. No. 10/813,435

Filed: 31 March 2004

For: **METHOD AND APPARATUS FOR
STRENGTHENING GLASS**

Confirmation No. 3804

Art Unit: 1731

Examiner: Jason L. Lazorcik

Atty. Docket: 01638.0010.NUS02

BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant submits this Brief on Appeal to the Board of Patent Appeals and Interferences in response to the Final Office Action mailed 27 October 2008, and in view of the Notice of Appeal filed 27 April 2009.

No Extensions of Time are thought to be necessary. Nevertheless, if any such extensions are needed to ensure preservation of the Appeal or prevention of abandonment, they are hereby petitioned under 37 C.F.R. §1.136. All fees required therefore are hereby authorized to be charged to our Deposit Account No **08-3038** referencing docket number **01638.0010.NPUS02**. Any other fees that are deemed necessary for the processing of the Appeal or to otherwise prevent abandonment of this application, such fees are also hereby approved and should be charged to the above-noted deposit account number.

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I. REAL PARTY OF INTEREST

The real party of interest is The Coca-Cola Company.

II. RELATED APPEALS AND INTERFERENCES

There are no related Appeals or interferences known to Appellant that will directly affect or be directly affected by the Board's decision in the pending Appeal. There are also no Appeals and interferences known to the Appellant that have a bearing on the Board's decision in this pending Appeal.

III. STATUS OF CLAIMS

Claims 1, 6-16, 46, 49, 55-59, 61, 64-73, 78-88 are pending in the application. Claims 1, 46, 61, 73 are independent. The pending claims have been finally rejected by the Office Action dated 28 December 2007. A true and correct copy of these claims is appended hereto in the Appendix. The rejection of these claims is hereby Appealed.

IV. STATUS OF AMENDMENTS

No amendments subsequent to the Final Office Action of 28 December 2007 have been submitted, and all amendments submitted prior thereto are entered as indicated by the Final Office Action. Arguments and Request for Reconsideration under 37 C.F.R. 1.116 were submitted on 27 February 2009, in response to which an Advisory Action was issued on 10 March 2009. Nevertheless, no amendments to the claims were made after Final and no outstanding amendments remain.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention relates to a method of glass manufacturing that strengthens glass and improves on the methods of ion exchange in glass manufacturing processes and which is adapted to existing bottle manufacturing facilities without substantial retrofitting.

[Specification at page 8: para. 1015]

In particular, the invention provides a method of strengthening glass that includes applying salt to the surface of glass articles, such as bottles, for a period of 10 seconds or less. The salt is applied to facilitate an ion-exchange process which strengthens the glass.

[Specification at page 9: para. 1016; page 12: para. 1025; page 16: para. 1042; page 19: line 1] The formed article may also be flamed polished.

To affect the ion-exchange process and strengthen the glass, the formed article is dipped into a molten salt bath or salt may be applied to this formed article in other ways such as spraying. The formed article is typically at the annealing temperature of the glass upon formation (although other embodiments are also disclosed and contemplated). Immediately before dipping or application of the salt, the temperature may be above the annealing point.

The salt bath temperature may be near or above the temperature of the formed article. Further, a potassium mixture including potassium nitrate and potassium chloride can be used in the composition of the salt bath (other compositions are also contemplated by the specification). The salt bath composition permits the salt to remain in place on the surface of the formed article, providing a roughly uniform coating. *[Specification at page 17: para. 1044; page 18: para. 1047; page 19: para 1048-1049]*

After the application of salt, the formed articles are generally subjected to heat treatment in a lehr at particular temperatures for various lengths of time. *[Specification at page 20: para 1052]* The above method permits dipping or otherwise application of the salt for

much shorter periods of time as compared with the prior art and makes this method feasible in manufacturing facilities. [*Specification at page 18: last 4 lines*]

Figure 2 provides a flow chart of this process. The specification also includes examples of values and compositions for the various parameters affecting the method and provides several working examples.

VI. GROUND OF REJECTION TO BE CONSIDERED ON APPEAL

Appellant requests review of the following grounds of rejection:

1. Whether claims 1, 6-8, 10-16, 46, 49, 55-59, 61, 64-66, 68-73, 78-88 are properly rejected under 35 U.S.C. §103(a) as obvious over Great Britain Patent Number 1,010,164 to Pittsburg Glass Co.
2. Whether claims 9 and 67 are properly rejected under 35 U.S.C. §103(a) as obvious over Great Britain Patent 1,010,164 to Pittsburg Glass Co. and US Patent Number 3,573,072 to Duke.

VII. ARGUMENT

A. The following art is relied upon by the Examiner in the final rejections:

Great Britain Patent Number 1,010,164 to Pittsburg Glass Co. (“GB164”)
US Patent Number 3,573,072 to Duke (“Duke”).

B. The rejection of claims 1, 6-8, 10-16, 46, 49, 55-59, 61, 64-66, 68-73, 78-88 under 35 U.S.C. §103(a) as obvious over GB164 is improper.

Appellants respectfully submit that the Final Action errs in the rejection of the above-noted claims. The Final Action rejects these claims as obvious over GB164, stating:

With respect to the substrate immersion time, Applicant acknowledges that *typical* chemical strengthening operations utilize an immersion or dip time of 30 minutes to 4 hours (see pg 18, ¶(1047)). As noted by Applicant in the reply dated September 12, 2008 (see quotation bridging pages 8-9), the GB'167 [*sic*] reference teaches treatment times 'substantially less than 5 minutes' (pg 3, lines 91-129). While the reference sets forth preferred embodiments having dipping times of 15 seconds, said reference places neither explicit nor implicit limitations upon the shortest dipping times applicable for the process. [*emphasis in original*]

Although the prior art explicitly sets forth embodiments wherein a glass plate is immersed into a molten salt bath for times "substantially less than 5 minutes" and as short at [*sic*] 15 seconds, the reference is silent regarding the particular claimed immersion periods of "10 seconds or less" and 'about 0.5 seconds to about 30 seconds' as required by dependent claims 6, 49, 64, and 78.

Although the prior art does not explicitly set forth Applicants particularly claimed immersion period of less than 10 seconds, it is the Examiners [*sic*] position that said immersion period would have represented a merely obvious extension over the process explicitly set forth in the prior art.

[*Final Office Action of 10/27/08: page 4*]

The Final Action then attempts to draw a parallel that both the prior art process and the claimed invention "make use of immersion periods which one of ordinary skill would recognize as significantly shorter than the 'typical' processing parameter (e.g. about 3 to 60 seconds for the prior art and the claimed invention versus the 1,800 to 14,400 seconds for Applicants admitted 'typical process')." [*Final Office Action of 10/27/08: paragraph bridging pages 4-5*] Further, the Final Action states that reduction in immersion time predictably reduces the "temper effect" (understood to mean the strengthening effect) and from that concludes that one of ordinary skill would be motivated to reduce immersion times. The analysis then concludes with three conclusory statements that the process time of 10 seconds or less is construed to " 1) be wholly encompassed by the broader disclosed dipping time of 'substantially less than 5 minutes', 2) to yield a predictable extension over the preferred embodiment . . . 3) would have reasonably been derived through no more than routine experimentation" [*Final Office Action of 10/27/08: page 6*]

Appellants will demonstrate that the above statements are inaccurate and the conclusions drawn are incorrect. Moreover, the premises offered do not lead to the conclusion of obviousness derived in the Final Action. Further still, the Final Action does not apply the correct standard of obviousness.

As an initial matter, Appellants point out that all of the claims require a dipping or application time of 10 seconds or less. Further, dependent claims 6, 49, 64, and 78 narrow this

range to 3 to 5 seconds. Therefore, there are no claims that encompass a range of 0.5 to 30 seconds, frequently alluded to by the Final Action, and any analogy or parallel drawn on this basis is incorrect.

Appellants respectfully traverse the position advanced in the Final Action, see above, and thus the rejection predicated thereupon. The alleged parallel attempting to equate the prior art with the claimed invention is erroneous. It cannot be properly or logically concluded that, because the prior art teaches a dipping time of “substantially less than 5 minutes,” the prior art teachings are equivalent to the claimed invention. Even if relying on the single embodiment of a dipping time of 15 seconds taught by GB164, the mere presence of a teaching of 15 seconds cannot and does not equate with a claimed range of 10 seconds or less. These two ranges are not overlapping and they are not “close” in value: the 15 second time is 50% larger than the upper limit of the claimed range. Thus, merely because the prior art and the claimed invention both set forth time periods less than some arbitrary larger period of 5 minutes, it cannot be concluded that they are “equivalent,” similar, or obvious. [See also the arguments in the After Final response of 2/27/09: page 7; Examiner’s comments in the Final Office Action dated 6 July 2007: bottom of page ; Applicant’s Response of 11 April 2007: pages 7-8; Applicant’s Response of 2 October 2007: paragraph bridging pages 7 and 8; and Applicant’s arguments in the Pre-Appeal Brief Request; Applicant’s Response of 12 September 2008: page 7.] A fair reading of the GB 164 patent, as a whole, clearly reveals that 15 seconds does not in any way disclose or suggest the range of 10 seconds or less and that the GB 164 reference establishes 15 seconds as the minimum time contemplated for the process.

Additionally, it is incorrect to state, “While the reference sets forth preferred embodiments having dipping times of 15 seconds, said reference places neither explicit nor implicit limitations upon the shortest dipping times applicable for the process.” [Final Office Action of 10/27/08: page 4] Indeed the reference does place restrictions on the dipping time, as more fully explained below, by establishing that increasing the dipping time improves the strength of the glass and by providing a lowest contemplated dipping time of 15 seconds.

According to the GB164 reference, the dipping time must be sufficiently long to affect the appropriate strengthening, “[a]t lower temperatures the effect of such contact is so slow that

production of glass articles herein contemplated cannot be achieved within periods of time which are commercially practicable.” [GB 164 p. 3: lines 11-15] The GB164 reference also explains:

Contacting the glass with the potassium treating salt for times substantially less than 5 minutes can be satisfactorily conducted provided that sufficiently high temperatures are employed to secure the necessary potassium exchange in the surface region of the glass article being treated. . .

That is to say that in order to secure the utmost benefits of the strength characteristics which can be imparted to glass articles according to the present invention, it is necessary to conduct the potassium exchange so that there is a depth penetration of potassium for at least a finite thickness towards the mid-plane of the glass article. Thus, the increase in strength is sufficiently deep on a penetration level so that subsequent abrasive treatment . . . will not cause substantial loss of strength characteristic . . .

Another factor to be considered when lower contact times, viz., contact treating times substantially below 5 minutes, are employed is the effect the higher treating temperatures can have upon viscosity characteristics of the glass article being treated.

[GB 164 p. 3: lines 91-129]

Therefore, selection of the dipping time has criticality, and is disclosed as being “usually 5 to 25 minutes.” [GB 164 p. 1: 44-46] Further, The GB 164 reference discloses seven examples that are treated in the salt bath. Of the seven examples, all but one treat the samples by dipping them for **10 minutes or more**. Only example IV uses a dipping time less than 10 minutes; it uses 15-60 seconds. Additionally, in example IV, GB164 cautions against dipping times of less than 5 minutes by noting the criticality of the bath temperature, as well as other properties such as viscosity. GB 164 generally cautions against the use of the high temperatures [see the excerpts from page 3 above] as necessitated by reduction of dipping times. Therefore, it is incorrect to conclude that the prior art does not place any restrictions on the shortest dipping time available and clearly the prior art does not suggest or teach a dipping time of 10 seconds or less. [See also the arguments in the After Final response of 2/27/09: page 8]

Moreover, even if the prior art does not place restrictions on the dipping time, which is shown to be false, one cannot properly conclude that the prior art renders obvious *any* dipping time.

It is a significant fact that the prior art does not teach, implicitly or explicitly, a range of 10 seconds or less. The Final Action admits to this fact repeatedly [*e.g., see the excerpts from the Final Action above*]. Given that the prior art does not teach this claimed feature, one looks to the standard of obviousness as set forth by *Graham v. John Deere Co.*, 383 U.S. 1 and reaffirmed by *KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. _____. “Office personnel fulfill the critical role of factfinder when resolving the *Graham* inquiries. It must be remembered that while the ultimate determination of obviousness is a legal conclusion, the underlying *Graham* inquiries are factual. When making an obviousness rejection, Office personnel must therefore ensure that the written record includes findings of fact concerning the state of the art and the teachings of the references applied. In certain circumstances, it may also be important to include explicit findings as to how a person of ordinary skill would have understood prior art teachings, or what a person of ordinary skill would have known or could have done. Factual findings made by Office personnel are the necessary underpinnings to establish obviousness.” [*MPEP 2141(II)*] The Final Action has not met its burden of fact finding and does not correctly resolve the *Graham v. Deere* inquiries by determining the correct scope of content of the prior art, ascertaining the differences, and resolving the level of ordinary skill. Indeed the Final Action merely concludes that the claimed range (10 seconds or less) is obvious because some other range (15-60 seconds) is taught in the prior art. No factual evidence is provided that the range of 10 seconds or less was known by the prior art or would have been by contemplated by one of ordinary skill with a reasonable expectation of success. The closest range is many-fold larger, and the “closest” reference, GB164, clearly contemplates longer—not shorter—dipping times. Further as discussed above, even the GB164 reference teaches away from the claimed range by cautioning against increased dipping time and higher bath temperatures. Therefore, concluding that the range of 10 seconds or less is a mere obvious extension over the prior art is in error.

The Final Action alleges that that reduction in immersion time predictably reduces the “temper effect” (understood to mean the strengthening effect) and from that concludes that one of ordinary skill would be motivated to reduce immersion times. Not only is assuming that reduction of immersion time *predictably* reduces the strengthening of the glass unsubstantiated and without basis, but also it is erroneous to concluded that such a reduction is a motivation to reduce the dipping time. Indeed given that the manufacturing method is directed at increasing

the strength of the glass, one of ordinary skill would be motivated to increase the strength and not to decrease it.

Additionally, the prior art does not suggest or direct one of ordinary skill to reduce the dipping time below 15 seconds and even teaches away from it. GB164 teaches that strengthening requires sufficient exposure time with the salt and thus encourages increasing this time. Examining the GB164 reference yields that the results section for example IV, GB 164 merely discloses that samples 42-77 have “superior load strengths as compared to the conventional polished soda-lime-silica glass (Samples 78-113, respectively) which were not subjected to potassium treatment in accordance with this invention.” [GB 164 p. 12: lines 54-59] Therefore, the improvement in strength is mentioned only with respect to completely untreated samples and no comparison is provided to samples dipped for longer times. Additionally, no specific strength data is provided for the samples of example IV, in contrast to the longer-dipped samples of the other examples, for which specific strength values are provided. Therefore, no improvement is taught or suggested as a result of the lowered dipping time. If any thing, one of ordinary skill is led to assume that the improvement is better for the samples dipped for 10 minutes based on the description of the process of the GB 164 reference and based on the fact that specific improvement values are provided only for the samples dipped 10 minutes. [GB 164, the tables at pages 6, 9, 10, 11] To this end, the GB164 reference does not teach or suggest a dipping time of 10 seconds or less. [See also the arguments in the After Final response of 2/27/09: page 9]

The three statements on page 6 of the Final Action are unsupported by fact and proper legal methodology. First, GB164 does not teach a larger, broader range that encompasses the claimed range. Specifically, GB164 does not disclose a range of 5 minutes or less: it teaches a range of 15-60 seconds at best. Therefore, 15 seconds and larger do not encompass 10 seconds or less. Further, MPEP §2131.03 clearly states that a non-overlapping range, as well as a broad overlapping range, does not anticipate a claimed range, and a proper determination of obviousness must be made on a case-by-case basis. Therefore, the Final Action errs in fact and in legal principle when it concludes that GB164 encompasses the claimed range and thus renders it obvious.

Second, to characterize the claimed invention as a “predictable extension over the preferred embodiment of dipping the glass sheet for 15 seconds” is unjust and unsupported. The claimed range is in no way “predictable.” It is a separate and much shorter time period that the Appellants have invented. Further, this range is in no way “extending” the value of 15 seconds. In particular, in view of the prior art, the Appellants have specifically amended the claims to remove the range of 15 to 30 seconds which could have been construed as an extension. In view of this amendment, there is absolutely no basis to characterize the claimed range as an “extension” of the 15 second time taught by the prior art.

Third, to conclude that the claimed range would have reasonably been discovered through routine experimentation is again unjust and unsupported. There is no evidence in the GB164 reference or the body of the prior art as a whole that suggests or teaches a range of 10 seconds or less. There is no teaching that leads one of ordinary skill in that direction, nor is there any motivation implicit or explicit that suggests reducing the time beyond that single instance of processing at a 15 second time period. The closest prior teaching of a reduced dipping time is the embodiment of the GB164 which has a time of 15 seconds, and, as established above, this reference does not teach or suggest reducing the time beyond 15 seconds—rather teaches the reduced time period to be 15-60 seconds.

Lastly, the method of the prior art is not one that enables sufficient strengthening or proper processing of the glass within a time range of 10 seconds or less. According to the GB164 reference, the strength improvement of the treated glass is predicated on the amount of ion exchange. In example IV, the only instance where the dipping time is as low as 15 seconds, the salt bath is maintained at a temperature of 950°F. [GB 164 p. 12: line 21] The substance of this bath, the potassium nitrate, [GB 164 p. 12: line 18] has a melting temperature of 633°F (334°C). Given that the temperature of the bath is over 300°F higher than the melting point of the potassium nitrate, the liquid in the bath is fluid and has low viscosity. Therefore, when the glass is removed from the bath for the subsequent 15 minute out-of-tank heating, the low viscosity fluid of the salt bath substantially drips off of the samples and thus does not enable sufficient time for proper ion exchange and thus strengthening of the glass. [See also the arguments in the After Final response of 2/27/09: paragraph bridging pages 9-10]

For at least the reasons set forth above, the rejection of the claims is improper and prompt reversal is earnestly requested.

C. The rejection of claims 9 and 67 under 35 U.S.C. §103(a) as obvious over GB164 and Duke is improper.

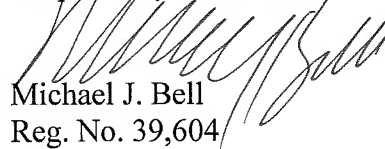
Claims 9 and 67 depend from claims 1 and 61 above. The rejection of these claims relies on the teachings of GB164 for the claim feature of 10 seconds or less. Duke does not remedy this deficiency. Therefore, the rejection is incorrect at least for the reasons articulated in section B above with respect to GB164.

D. CONCLUSION

As demonstrated above, the Final Action fails to set forth a prima facie case of obviousness under 35 U.S.C. §103(a). Further, the prior art fails to disclose or suggest the limitations of the claims, as well as failing to fairly suggest the claimed subject matter as a whole. Therefore, Appellant requests that the Board reconsider the outstanding rejections and reverse them so that the claims can be passed to issue.

This Appeal Brief is being submitted in accordance with 37 C.F.R §41.37 within the specified period for response and two months from the date of the filing of the Notice of Appeal. If any additional fees are deemed necessary for the advancement of the Appeal and to avoid abandonment of the application, they are hereby authorized to be charged to our Deposit Account number **08-3038** as noted on the first page of this submission.

Respectfully Submitted,



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VIII. CLAIMS APPENDIX

LISTING OF CLAIMS

1. (Previously Presented) A method, comprising the steps of:
forming a glass article from molten glass, the glass having an annealing point temperature;
dipping the formed glass article in a molten salt bath for 10 seconds or less, the salt bath comprising potassium ions wherein the surface temperature of the glass article is at least the annealing point temperature of the glass during the dipping step; and
maintaining the glass article at a temperature between the strain point temperature of the glass and about 150°C below the strain point temperature for at least about five minutes.
- 2 – 5. (Cancelled)
6. (Original) The method of Claim 1, wherein the glass article is dipped in the salt bath for between about 3 and 5 seconds.
7. (Original) The method of Claim 1, wherein the salt bath comprises potassium nitrate and potassium chloride.
8. (Original) The method of Claim 7, wherein the potassium nitrate is in the range of 40-60 mol% and the potassium chloride is in the range of 40-60 mol%.
9. (Original) The method of Claim 1, wherein the salt bath comprises potassium sulfate and potassium chloride.
10. (Original) The method of Claim 1, wherein the salt bath comprises a combination of at least two of potassium nitrate, potassium chloride, and potassium sulfate.
11. (Original) The method of Claim 1, wherein the salt bath comprises a combination of at least two of potassium nitrate, potassium chloride, and potassium sulfate, the combination having a melting point of at least 550°C.
12. (Original) The method of Claim 1, wherein the salt bath has a temperature of between about 550°C and about 750°C.
13. (Original) The method of Claim 1, wherein maintaining the glass article is at a temperature between the strain point temperature and about 130°C below the strain point temperature.

14. (Original) The method of Claim 1, wherein the strain point temperature is about 530°C.

15. (Original) The method of Claim 1, further comprising:

flame polishing the glass article prior to dipping the glass article in the salt bath.

16. (Original) The method of Claim 1, further comprising:

after the step of maintaining, cooling the glass article, removing residual salt from the glass article and applying a protective scuff resistant coating to the surface of the glass article.

17 – 45. (Cancelled)

46. (Previously Presented) A method for strengthening a glass article, comprising:

forming the glass article from molten glass, the glass having an annealing point temperature;

applying potassium ions to the surface of the glass article for 10 seconds or less, wherein the surface temperature of the glass article is at least the annealing point temperature of the glass during the applying step; and

maintaining the glass article at a temperature between the strain point temperature of the glass and about 150°C below the strain point temperature for at least about five minutes.

47 – 48. (Cancelled)

49. (Original) The method of Claim 46, wherein the step of applying the potassium ions to the surface of the glass is accomplished by dipping the glass article in a salt bath for between about 3 and about 5 seconds.

50 – 54. (Cancelled)

55. (Original) The method of Claim 46, wherein the glass article is at a temperature of at least about 25°C above the annealing point of the glass during the applying step.

56. (Original) The method of Claim 46, wherein the glass article is at a temperature of at least about 50°C above the annealing point of the glass during the applying step.

57. (Original) The method of Claim 46, wherein the surface of the glass article is at a temperature of at least about 80°C above the annealing point of the glass during the applying step.

58. (Original) The method of Claim 46, wherein maintaining the glass article is at a temperature between the strain point and about 130°C below the strain point.

59. (Original) The method of Claim 46, wherein the strain point temperature is about 530°C.

60. (Cancelled)

61. (Previously Presented) A method, comprising:
forming a glass article from molten glass;
dipping the formed glass article in a salt bath for 10 seconds or less, the salt bath comprising potassium ions, the glass articles being dipped for less than about 30 seconds; and
maintaining the glass article at a temperature between the strain point temperature of the glass and about 150°C below the strain point temperature for at least about five minutes.

62 – 63. (Cancelled)

64. (Original) The method of Claim 61, wherein the glass article is dipped in the salt bath for between about 3 and about 5 seconds.

65. (Original) The method of Claim 61, wherein the salt bath comprises potassium nitrate and potassium chloride.

66. (Original) The method of Claim 65, wherein the potassium nitrate is in the range of 40-60 mol% and the potassium chloride is in the range of 40-60 mol%.

67. (Original) The method of Claim 61, wherein the salt bath comprises potassium sulfate and potassium chloride.

68. (Original) The method of Claim 61, further comprising:
flame polishing the glass article prior to dipping the article in the salt bath.

69. (Original) The method of Claim 61, further comprising:
after the step of maintaining, applying a protective scuff resistant coating to the surface of the glass article.

70. (Original) The method of Claim 61, wherein the salt bath has a temperature of between about 550°C and about 750°C.

71. (Original) The method of Claim 61, wherein maintaining the glass article is at a temperature between the strain point temperature and about 130°C below the strain point temperature.

72. (Original) The method of Claim 61 wherein the strain point temperature is about 530°C.

73. (Previously Presented) A method, comprising the steps of:

forming a glass article from molten glass, the glass having an annealing point temperature;

preheating the glass article to a preheating temperature;

dipping the formed glass article in a molten salt bath having a temperature more than said preheating temperature for 10 seconds or less and the salt bath comprising potassium ions wherein the surface temperature of the glass article is at least the annealing point temperature of the glass during the dipping step; and

maintaining the glass article at a temperature between the strain point temperature of the glass and about 150°C below the strain point temperature for at least about five minutes.

74 - 77. (Cancelled)

78. (Previously Presented) The method of Claim 73, wherein the glass article is dipped in the salt bath for between about 3 and about 5 seconds.

79. (Previously Presented) The method of Claim 73, wherein the salt bath comprises potassium nitrate and potassium chloride.

80. (Previously Presented) The method of Claim 73, wherein the potassium nitrate is in the range of 40-60 mol% and the potassium chloride is in the range of 40-60 mol%.

81. (Previously Presented) The method of Claim 73, wherein the salt bath comprises potassium sulfate and potassium chloride.

82. (Previously Presented) The method of Claim 73, wherein the salt bath comprises a combination of at least two of potassium nitrate, potassium chloride, and potassium sulfate.

83. (Previously Presented) The method of Claim 73 wherein the salt bath comprises a combination of at least two of potassium nitrate, potassium chloride, and potassium sulfate, the combination having a melting point of at least 550°C.

84. (Previously Presented) The method of Claim 73, wherein the salt bath has a temperature of between about 550°C and about 750°C.

85. (Previously Presented) The method of Claim 73, wherein maintaining the glass article is at a temperature between the strain point temperature and about 130°C below the strain point temperature.

86. (Previously Presented) The method of Claim 73, wherein the strain point temperature is about 530°C.

87. (Previously Presented) The method of Claim 73, further comprising:

flame polishing the glass article prior to dipping the glass article in the salt bath.

88. (Previously Presented) The method of Claim 73, further comprising:

after the step of maintaining, cooling the glass article, removing residual salt from the glass article and applying a protective scuff resistant coating to the surface of the glass article.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.